Challenge Program on **Water and Food**	**COMPLETION REPORT** **1 January 2006 to 31 December 2009**

The Completion Report has two components: 1) **PROJECT REPORT** and 2) **FINAL REPORT**

Project Report: A technical **Project Report** is required upon completion of the project to be prepared using the CPWF Style Guidelines. This comprehensive Project Report will consist of all technical aspects of the project in one report. The guidelines for this is provided separately.

Final Report: The guidelines for the **Final Report** is found below following the Project Profile cover page.

The Completion Report – consisting of both the Project Report and the Final Report should be submitted to the CPWF Project Manager: Research with a copy to the respective Basin Coordinator and Theme Leader or Basin Focal Project Leader.

PROJECT PROFILE (this information will appear once only as a header sheet to your reports when they are electronic)

PROJECT NO.: 25	**PROJECT TITLE:** Companion modelling (ComMod) for resilient water management: Stakeholders' perceptions of water dynamics and collective learning at the catchment scale.
LEAD CPWF THEME: 2	**LEAD CPWF BENCHMARK BASIN(S): Mekong**
SECONDARY CPWF THEME(S): 4 (if any)	**SECONDARY RIVER BASIN(S):** Bhramaputra
PROJECT DURATION: 4 years	

FINAL REPORT

- **Capacity building** – please provide the details of all the capacity building activities in your project in the format given below.

Category	Name	Achievements
Bachelors students	Aita Kumar Bhujel, Bhutan	Diploma degree on Integrated Watershed Management, Kasetsart University, Bangkok, Thailand granted in May 2009. Aita was a key PN25 collaborator in the implementation and monitoring of the collaborative modelling and simulation activities at Lingmuteychu site in west central Bhutan where a Watershed Management Committee was created during the project. Thanks to this diploma, this young researcher is now able to pursue his studies at the College of natural resources (CNR), Royal University of Bhutan (RUB) where he plans to continue to make use of the PN25 approach and tools.
Masters students	Manitchara Thongnoi, Thailand	- Master in Integrated Farming at the Faculty of Agriculture, Ubon Rajathanee University (UBU), northeast Thailand granted in February 2009. For 3 years, Manitchara carried out the monitoring and evaluation of the effects and impacts of the collaborative modelling and simulation activities at the Lam Dome Yai watershed site in close collaboration with PhD student Warong Naivinit.
	Anuttara Tianvorakoon	Computer science: creation, development of specific modules and maintenance of PN25 website since late 2008 and up to present.
PhDs	Cécile Barnaud, France	Cécile defended her doctorate dissertation titled "Equity, power games and legitimacy: dilemmas of concerted management of renewable resources. Testing a critical companion approach in two agrarian systems of Northern Thailand highlands" in May 2008 at Paris X University, France and received the unanimous congratulations of the jury. She is presently a post-doctorate student at GREEN research unit of Cirad working on ecosystem services.
	Le Canh Dung, Vietnam	Dung defended his PhD dissertation titled "Environmental and socio-economic impacts of rice shrimp farming: Companion modelling case study in Bac Lieu province, Mekong delta, Vietnam" in the agro-technology program at the Faculty of science, Chulalongkorn University, Bangkok, Thailand in April 2009 and is presently a lecturer-researcher at Cantho University Mekong Delta Development Research Institute (MDI) in southern Vietnam where he introduces graduate students to PN25 methods and tools.
	Warong Naivinit, Thailand	Warong defended his PhD dissertation titled "Companion Modelling to analyse the land/water use and labour migration interactions in Lam Dome Yai watershed, Lower Northeast Thailand" in April 2009 under a joint degree program at both Chulalongkorn University, Bangkok, Thailand and Paris Ouest Nanterre la Défense University in Paris, France where he also received the unanimous congratulations of the jury. Warong is presently a lecturer-researcher at the Faculty of Agriculture, Ubon Rajathanee University in lower northeast Thailand. He uses PN25 methodology and tools to teach master students in application of computer technology in agricultural development.
	Pongchai Dumrongrojwatthana, Thailand	Pongchai defended his PhD dissertation titled "Interactions between cattle raising and reforestation in the highland socio-ecosystem of Nan province, northern Thailand: A companion modelling process to improve landscape management" in April 2010 under a joint degree program at both Chulalongkorn University, Bangkok, Thailand and Paris Ouest Nanterre la Défense University in Paris, France where he also received the unanimous congratulations of the jury. After

		his graduation, Pongchai was hired as assistant professor at the Faculty of Science, Chulalongkorn University, Bangkok, Thailand. In January 2010, Pongchai started to teach the companion modelling approach in the international master program in Ecological Economics at Chulalongkorn University Faculty of economics.
	Panomsak Promburom, Thailand	Panomsak defended his PhD dissertation titled "Companion Modelling & watershed management in northern Thailand: The importance of local networks" on May 26, 2010 at Claude Bernard Lyon 1 University, France. Following his recent graduation, Panomsak is back at the Multiple Cropping Center (MCC) of the Faculty of agriculture, Chiang Mai University (CMU) where, starting next semester, he will teach a course titled "Participatory resource analysis and management" drawing on his doctoral research under PN25.
	Tayan Raj Gurung, Bhutan	Tayan is writing his PhD dissertation tentatively titled "Comparative analysis of using companion modelling to facilitate adaptive management of agricultural water in Bhutan". He will defend it in the Human geography program at Paris Ouest Nanterre La Défense University in Paris, France in early 2011.
Post docs	-	
NGOs	-	
NARES	Extension and development workers	At all of PN25 9 sites, several local extension workers, local administrators or development officers took part in the series of (1 to 5 depending on the site) participatory modelling and simulation field workshops. Several of them were also involved in monitoring and evaluation activities at the sites. In Bhutan, special training courses were organized for them in January 2006 and December 2007.
	Undergraduate students	Most of the role-playing games used in PN25 were first tested with university students and at most sites several of them were trained to assist the ComMod process facilitator in the implementation of successive participatory modelling and simulation field workshops.
Farmers	- 1 site in Vietnam - 5 sites in northeast and northern Thailand - 3 sites in west central and eastern Bhutan	- At each of the PN25 9 sites, from 10 to more than 20 farmers were trained in the use of collaborative gaming and simulation tools (both low tech role-playing games and high tech agent-based simulators) during series of (1 to 5 depending on the site) participatory modelling and simulation field workshops. - The (both internal and external) evaluation reports published by PN25 document the multiple capacity building effects of the ComMod activities on these participants such as improved self-confidence (particularly in the case of women participants), improved communication, individual and collective learning, expansion of social networks and improved capacity fo self-organization. At the Lam Dome Yai site in northeast Thailand, participating farmers are confident enough to present "their" model of land-water-labour management in rice production to tens of master students and the faculty staff at the local regional UBU university. - At several sites in northern Thailand, out-scaling activities were implemented to present the results of the intensive workshops to whole village communities (approximately 100 villagers each time).
Scientists	Observers in field workshops	Frequently, national or foreign scientists took part as observers in the participatory modelling and simulation field workshops, especially in Thailand. Several of them learned the approach and its tools subsequently and developed their own ComMod processes and applications.
	5 short training courses	During PN25, 5 short (from 3 days to one week long) training courses were

	Final 2-week regional training course	organized for interested scientists and training of local collaborators in Thailand (three times) and Bhutan (twice). See details in PN25 Final report. This course on ComMod for INRM held at the Faculty of Science, Chulalongkorn University, Bangkok was attend by 20 young scientist from 12 countries on every continent and was an opportunity to further disseminate the outputs from the project, especially in Africa.
Others	Development and maintenance of PN25 website at www.cpwf25.sc.chula.ac.th	The project website is used to provide PN25 publications and training materials to any interested person. The monthly number of visits varies between 400 and 1350 during the past year.
Future needs	Tayan Raj Gurung	To complete dissertation writing and defend his PhD dissertation at Paris Ouest Nanterre la Défence University in Paris, France in early 2011: Tayan benefits for an extension of CPWF support until late November 2010 granted to him on October 31, 2007.

- **Data collection storage and sharing** – please provide details of all data collected/acquired by your project in the format given below.

Please note that under the Project Agreement (standard clauses), that all data collected by your project is to be made freely available as an international public good. We are keen to ensure that data is shared as widely as possible both within the CPWF and to the wider community. If you want to discuss this issue please contact Mir Abdul Matin, Project Manager, Integrated data and Information System (IDIS) on m.matin@cgiar.org
Please send all data collected/acquired by your project in CD/DVD and provide description in the format given below. If you don't have data on any of the types mentioned below, leave it blank. In case of data collected on any types not mentioned please add the type and use similar format (e.g title, country, basin, time period, data source, use/distribution restriction, file name etc.) Please add any supplementary/additional comment you would like to mention on any data set. You will be contacted by IDIS in case any further clarification is required on any of the supplied data set.

All data used in PN25 activities, including full text of PhD dissertations and their appendices are deposited on the project website and are available at: http://www.cpwf25.sc.chula.ac.th
The server is hosted by Chulalongkorn University in Bangkok and there is an agreement with our main collaborator at the faculty of Science, CU (Dr. Pongchai Dumrongrojwatthana) to keep this website operational for several years after the termination of PN25 project.

1. Secondary data

1.1 Time series data on water and climate:

Title of the data set	Country	Basin	Number of station	Time period (From – To)	Data source	Restriction of distribution/use	Data files (Names of files) *

* Data files should contain station wise time series data, list of stations with station name, station id (if applicable), country, state, district and geographic position of stations (x,y,z)
Example: Daily stream flow, Monthly average rainfall

1.2 Statistical data on socio-economy, demography, agriculture, water, climate and environment

Title of the	Country	Basin	Number of	Time	Data	Restriction of	Data files (Names

data set			location	period	source	distribution/use	of files)*

*Data files should include actual data, list of locations including (country, state, districts…), field descriptions including name, unit of measurement, code lists (if contains coded value)
Example: District wise population by age group, State wise crop production and yield by crops

1.3 Base GIS data on administrative boundary, transportation, hydrography, infrastructure, soil, land use, topography)

Layer name	Description	Geographic coverage	Format (vector, raster)	Feature type (polygon, line, point)	Data source	Source scale	Data provider (name address, e-mail)	Restriction of distribution/use	Data files (names of files)*

*Data files should include geometry file, projection file, description of field including name, unit of measurement, code list (if coded).
Example: District boundary of China, Detailed soil type

1.4 GIS data on socio economic, demography, water, agriculture, climate, land, environment and disaster)

Layer name	Description	Geographic coverage	Format (vector, raster)	Feature type (polygon, line, point)	Data source	Source scale	Data provider (name address, e-mail)	Restriction of distribution/use	Data files (names of files)*

*Data files should include geometry file, projection file, description of field including name, unit of measurement, code list (if coded).
Example: District wise population density map, Crop suitability map

1.5 Satellite image

Title	Geographic coverage	Type of satellite	Resolution	Time period	Data source	Restriction of distribution/use	File names

2. Processed data

List any manipulated data processed under your project (e.g. Land use map generated from satellite images, projected yield and production, interpolated rain fall etc.).
Data set title:
Description:
Purpose:
Geographic coverage (country, basin):
Resolution (in case of raster data):
Original data used:
Process description (process used for manipulation):
Access/use restriction:
Data file name:

3. Primary data

For each survey include the following:
Title of the survey:
Objective of the survey:
Time period:
Location (country, area):
Method of data collection:
Number of samples:
File names (Data files, questionnaire, list of survey location, supplementary information*)
Supplementary information includes code sheets, field description including name, unit of measurement, reference to questionnaire section, code list (if coded)

4. IP Audit Compliance

Please specify the IP audit compliance with the data described in section 1, 2 and 3. Add the data item included in the IP audit document in the following table with corresponding SL of data.

Description of Third Party IP – what is it?	Source of Third Party IP – where did it come from?	Owner of Third Party IP – who's owns it?	IP Rights Owned by Third Party – what kind of IP rights does the owner have?	Status of Third Party IP Rights – do you have a legal right to use it?	SL (add the SL used to describe the data set in section 1,2,3)

- **Student Thesis** – please provide details of student thesis work accomplished through your project – for both completed and forthcoming work. (Note: All Thesis and Dissertations i.e. full/complete versions must be submitted separately on CD).

Type	Title	Published / Expected Date	Authors
PhD. Dissertation	Equity, power games and legitimacy: dilemmas of concerted management of renewable resources. Testing a critical companion approach in two agrarian systems of Northern Thailand highlands	Defended at Paris X university, France in May 2008	Cécile Barnaud
PhD. Dissertation	Environmental and socio-economic impacts of rice shrimp farming: Companion modelling case study in Bac Lieu province, Mekong delta, Vietnam	Defended in the agro-technology program, Faculty of science, Chulalongkorn University, Bangkok, Thailand in April 2009	Le Canh Dung
PhD. Dissertation	Companion Modelling to analyse the land/water use and labour migration interactions in Lam Dome Yai watershed, Lower Northeast Thailand"	Defended in April 2009 under joint degree program at both Chulalongkorn University, Bangkok, Thailand and Paris Ouest Nanterre la Défence University in Paris, France	Warong Naivinit
PhD. Dissertation	Interactions between cattle raising and reforestation in the highland socio-ecosystem of Nan province, northern Thailand: A companion modelling process to improve	Defended in April 2010 under a joint degree program at both Chulalongkorn University, Bangkok,	Pongchai Dumrongrojwatthana

	landscape management	Thailand and Paris Ouest Nanterre la Défence University in Paris, France	
PhD. Dissertation	Companion Modelling & watershed management in northern Thailand: The importance of local networks"	Defended on May 26, 2010 at Claude Bernard Lyon 1 University, France	Panomsak Promburom
PhD. Dissertation	Comparative analysis of using companion modelling to facilitate adaptive management of agricultural water in Bhutan	To be defended at Paris Ouest Nanterre La Défence University, France in early 2011	Tayan Raj Gurung
MSc. Thesis	Analysis of the effects of a companion modelling process on stakeholders in the Lam Dome Yai watershed of Ubon Ratchathani province	Master in Integrated Farming at the Faculty of Agriculture, Ubon Rajathanee University (UBU), northeast Thailand granted in February 2009	Manitchara Thongnoi

- **Communication Activities** – please provide details of all communication activities in the format given below.

Type	Where held	When held	Who aimed at	Outcome
Project Management Meetings				
1st PN25 Technical Workshop	Faculty of Science, Chulalonglkorn University,Bangkok,	October 2005	Initiation of the collaborative process	Project started & 2006 work plan defined
Meeting between the Thai and French partners	CIRAD, Baillarguet campus, Montpellier	29-30 March 2007	Better coordination between the partners at 9 different sites	Detailed work plan for 2007
2nd PN25 Technical Workshop	Sichang, Central Thailand	26-28 November 2007	Review of project achievements & definition of 2008 work plan	The project team is stronger & coordination is strengthened
3rd PN25 Technical Workshop	Kong Chiam District, Ubon Ratchathani province, northeast Thailand	8-13 June 2008	Review of project achievements & work plan; preparation of 5 papers for IFWF2, Addis Ababa	Project team is stronger, coordination is strengthened, first collective writing sessions
4th PN25 Mid-Year writing & technical workshop	Faculty of Science, Chulalonglkorn University,Bangkok,	3-8 May 2009	Review of project achievements & work plan; preparation of 4 joint papers	Work plan of final year defined; joint articles under preparation
5th and final PN25 writing & technical workshop	Sirindhorn dam, Ubon Ratchathani province, northeast Thailand	28 September – 2 October 2009	Review of project achievements, preparation of 4 joint papers & discussion of	4 joint papers under preparation with lead authors; contents of PN25 final report

			PN25 final report	
National Seminars / Conference Workshops				
Seminar on State of the Art in Participatory Modelling,	Faculty of Science, Chulalongkorn University, Bangkok	8 June 2006	Review of methodologies and agreement on a common one	Agreement on common methodology
Annual meeting of ADD ComMod meeting on monitoring and evaluation of participatory process	Avignon, France	26 February – 2 March 2007	Prepare the evaluation of the effects of ComMod processes	Methodology and preparation of use at 2 PN25 project sites
4th National Agricultural Systems Conference	Chiang Mai, Thailand	27-28 May 2008	Invitation to present ComMod approach and case studies.	Invited paper & 3 case studies presented by Ph.D. students.
Annual & final meeting of ADD ComMod Project on monitoring & evaluation of ComMod processes	Avignon, France	5-7 March & 20-22 October 2008	Synthesis on the evaluation of ComMod effects on participants	Draft chapters of collective book to be published in 2010
1st Thai Simulation and Gaming Conference	Thonburi University, Bangkok, Thailand	April 20, 2009	Launch of new national association	PN25 case study presented
5th Agricultural System Seminar	Ubon Ratchathani, Thailand	2-4 July 2009	Presentation of PN25 models & effects and impacts	3 MSc. & PhD students presented 2 case studies
2009 Annual academic meeting, Multiple Cropping Center, Chiang Mai University (MCC-CMU)	Chiang Mai, Thailand	19-20 August 2009	Presentation of PN25 modelling approach	Maehae case study presented by Thai PhD student
Conference on sustainability of rice-shrimp systems in the coastal Mekong River Delta	Soc Trang, Vietnam	24 September 2009	Presentation of PN25 modelling approach	Bac Lieu case study presented by Vietnamese PhD student
Green Research Unit Friday Seminar – Pongchai Dumrongrojwatthana	Baillarguet campus, Montpellier, France	6 November 2009	PhD. Research progress by Thai student / Doi Tiew case study	Discussion on final contents of PhD. dissertation
Green Research Unit Friday Seminar -– Pongchai Dumrongrojwatthana	Baillarguet campus, Montpellier, France	7 April 2010	Pre-defence of PhD dissertation	Improvement of presentation for PhD. defence
Green Research Unit Friday Seminar	Baillarguet campus, Montpellier, France	25 June 2010	PhD. Research progress by Bhutanese student	Discussion on final contents of dissertation
2010 Annual academic meeting, Multiple Cropping Center, Chiang Mai University (MCC-CMU)	Chiang Mai, Thailand	25-26 August 2010	Presentation of final Agent-Based Model for Maehae case study	Dissemination of key outputs of Thai PhD. student doctoral research
Regional Seminars / Conference Workshops				
Project Leaders', Theme Leaders' Management Team Meetings, and the Impact Pathway Workshop	Vientiane, Lao P.D.R.	February 2006	Exchange information with other Asian projects; training on impact & MSC methodology	Better integration of PN25 in the CPWF

CPWF Cross-theme and cross-scale integration – making research and networking work for positive change in the Mekong" workshop	Ho Chi Minh City, Vietnam	22-24 May 2007	Exchange information between projects in the Mekong Basin and activity integration	Integration PN25 in CPWF & Mekong basin, meet with CP external reviewer
CPWF Basin Focal Project 2nd workshop on analyzing water poverty	Chiang Mai, Thailand	31 October-2 November 2007	Develop a method to determine impact of ag. water management on livelihoods	Meeting with CPWF managers, learned Bayesian networks
Asian Simulation and Modelling (ASIMMOD) 2009	Bangkok, Thailand	22-23 January 2009	Presentation of the ABM of Lam Dome Yai case study	W. Naivinit's paper in proceedings
The 1st DELTA Asia Summit: Connecting great deltas, great rivers and great lakes	Angkor Century Hotel, Siem Reap, Cambodia	June 22-25, 2009	Presentation of methodology to mitigate water conflict	Thai PhD. Student case presented
International Seminars / Conference Workshops				
International Forum on Water and Food (IFWF1)	Vientiane/Lao PDR	12–17/11/06	Exchange information among projects	Better integration of PN25 in CPWF
International Conference on Asian Simulation and Modelling ASIMMOD 2007	Chiang Mai, Thailand	9th – 11th January 2007	Presentation of 4 papers by PhD. students	A whole session of the conference allocated to PN25 papers
2nd ISC2008 Conference	Basel, Switzerland	20-22 August 2008	Presentation of ComMod approach and one PN25 case study	Dr. Nipada Ruankew's communication & manuscript to journal
13th IWRA World Water Congress	Montpellier, France	1-4 September 2008	Presentation of the Lam Dome Yai case study & demos of the ABM for 2 days	W. Naivinit's paper in the proceedings
2nd International Forum on Water and Food of the CPWF (IFWF2)	Addis Ababa, Ethiopia	9-14 November 2008	Presentation of PhD. students' results and cross-site papers	4 short papers by PN25 PhD. students, 2 joint ones in the proceedings & best poster
24th Annual Landscape Ecology Symposium, Landscape Patterns and Ecosystem Processes	Snowbird, Utah, USA	April 12-16, 2009	Presentation of Thai PhD. Student results from Doi Tiew site	Paper selected for special issue of JLUS
Integrated Assessment of Agriculture and Sustainable Development: Setting the Agenda for Science and Policy" (AgSAP)	Egmond aan Zee, The Netherlands	10-12 March 2009	Project methodology & its external assessment presented	Paper in conference proceedings
40th Annual Conference of the International Simulation and Gaming Association	Singapore	June 29 – July 3, 2009	Project methodology for simulation & gaming presented	Networking with this global association
Emergence in Geographical	Paris, France	November	Presentation of	PhD. student paper

Space: Concepts, Methods and Models		2009	spatial modelling in PN25 case study	selected for Cybergeo journal
International Conference on Revisiting Agrarian Transformations in Southeast Asia: Empirical, theoretical and applied perspectives	Chiang Mai, Thailand	May 13-15, 2010	Presentation of project methodology & 1 case study	Paper in proceedings
Innovation and Sustainable Development in Agriculture and Food" (ISDA)	Le Corum, Montpellier, France	28 June -1 July 2010	Methodology of participatory simulations for creative negotiation	Illustrated by a PN25 case study in northern Thailand
International Symposium: Sustainable Land Use and Rural Development in Mountainous Regions of Southeast Asia	Intercontinental Hotel, Hanoi, R.S. du Vietnam	21-23 July 2010	Presentation of PN25 case study at Doi Tiew site, northern Thailand	Regional networking of Thai PhD. student
XIth Congress of the European Society for Agronomy (ESA) Agro 2010,	Le Corum, Montpellier, France	29 August - 3 September 2010	Presentation of 2 PN25 case studies with emphasis on models of water & land use	Selection of the most agronomic case studies from northern and northeast Thailand
Stockholm World Water Week	Stockholm, Sweeden	9 September 2010	Workshop 7 on Resilience, uncertainty & tipping points	Presentation of PN25 methodology & tools
Farmer Group Meetings / Workshops / Training Sessions / Demonstrations				
Workshop (RPG-based) on competition between aquaculture and agriculture in land use	Bac Lieu, Mekong Delta, Vietnam	August 2006	Exchange information and knowledge among stakeholders, envision scenarios	A simulation model tested, Discussions among stakeholders on water use
Workshop on watershed management	Radi, Bhutan	January 2006	Exchange information and knowledge among stakeholders, envision scenarios	Discussions among stakeholders on land-use management
Workshops on watershed management	Nan province, Thailand	June 2006, and several workshops between September and December 2007	Exchange information and knowledge among stakeholders, envision scenarios	Discussions among stakeholders on land-use management
Workshops on migrations of farmers	Lam Dome Yai watershed, north-east Thailand	July 2005, April 2006, October 2006	Exchange information and knowledge among stakeholders, envision scenarios	Discussions among stakeholders on the role of migrations on land and water use
2nd gaming workshop on competing water requirements between rice and shrimp productions	Bac Lieu Province, Mekong River Delta, Vietnam	16-19 July 2007	To understand the diversity of producers needs for water quality and decision-making rules for production	Understanding of farmers water quality needs and decision-making rules
Village workshops on the co-	Lam Dome Yai watershed,	24 April 2007	Exchange	Agreement on

construction of an agent-based model	Ubon Ratchathani, Northeast Thailand	& 5-7 August 2007	information and knowledge among stakeholders to design decision-making algorithms and rule-based agents	decision-making rules for rice pn. & migrations, modelling of water dynamics
Farmer / group interviews	Nam Haen site, Nan Province, Northern Thailand	4-9 June 2007	Evaluate ComMod effects on participating stakeholders	Evaluation report
Farmer / group interviews	Mae Salaep site, Chiang Rai Province, Northern Thailand	29 May–3 June 2007	Evaluate ComMod effects on participating stakeholders	Evaluation report
Farmer / group interviews	Lingmuteychu site, West Central Bhutan	26-28 June 2007	Evaluate ComMod effects on participating stakeholders	Evaluation report
Farmer / group interviews	Kengkhar site, Eastern Bhutan	August-September 2007	Diagnostic analysis to understand water use at this new site	Report on water availability and management at Kengkhar site
Participatory simulation workshop	Mae Hae site, Chiang Mai Province, Northern Thailand	September 2007	Presentation of the computerized water management gaming model	Feedback from villagers on this model and its use in the more holistic one
Demonstrations (as part of the one-week ComMod training course held in Bhutan)	Lingmuteychu site, West Central Bhutan	9 December 2007	Demonstration of the 7 villages water management agent-based model	Plan for a demonstration by village in early 2008
Village workshop on the co-construction of the agent-based model in Lam Dome Yai watershed, lower northeast Thailand	Ban Mak Mai village, Det Udom district, Ubon Ratchathani province, Thailand	5-6 February 2008	3 participatory simulation meetings with different small groups of rice farmers belonging to same type to refine BMM agent-based model to represent farmers' decisions when managing different farm types.	The BMM model was fine-tuned with farmers to better represent and simulate their rainfed lowland rice (RLR) growing practices.
Village workshop on the co-construction of the agent-based model in Lam Dome Yai watershed, lower northeast Thailand	Ban Mak Mai village, Det Udom district, Ubon Ratchathani province, Thailand	19 March 2008	Different types of farmers examined labor management practices, particularly those related to the choice between on-farm and off-farm employment.	BMM model fine-tuned with farmers to better represent and simulate labour use in rice production in relation to migrations.
Village gaming & simulation workshop on sharing water from 7 springs among	Kengkhar village, Mongar District, Eastern Bhutan	24-26 April 2008	Sensitizing local community on water use rules to	Workshop based on a 1st RPG played under different modes of

households			increase water use efficiency	communication among players. Led to design of prototype ABMsimulator.
Village workshop on model validation and exploration of scenarios in Lam Dome Yai watershed, lower northeast Thailand	Ban Mak Mai village, Det Udom district, Ubon Ratchathani province, Thailand	13-14 May 2008	A field workshop to validate the BMM model with all types of farming households & to explore scenarios varying the availability of water and labor.	BMM model validated by farmers. Two scenarios looking at interactions between water and labor use & identified, run & discussed.
Communication through the use of ABM in Lam Dome Yai watershed, lower northeast Thailand	Ban Mak Mai village, Det Udom district, Ubon Ratchathani province, Thailand	11 June 2008	BMM model was used by 3 farmers to exchange knowledge on rice farming and labor migrations with ten visiting scientists from PN25 team.	Communication between farmers and scientists was successfully supported by BMM simulations.
Farmers – scientists communication through the use of the BMM agent-based model in Ubon Ratchathani province, lower northeast Thailand	Faculty of Agriculture, Ubon Ratchathani University, Ubon Ratchathani province, Thailand	18 October 2008	BMM model presented & used by 11 farmers to exchange knowledge on RLR farming and labor migrations with lecturers and 70 master students in IT for agriculture & rural development.	Farmers had no problem to present the BMM model features and steps of a simulation and answered easily many questions from the floor.
Nan Khang Reforestation Unit's foresters and Doi Tiew's herders: sensitizing activity before first full field workshop	Tha Wang Pha District Administrative Office,Tha Wang Pha District, Nan Province, Thailand	4-5 September 2008	With 2 groups of stakeholders to test a simple gaming tool based on researcher's understanding of vegetation dynamics influenced by cattle raising & fire, and to sensitize a group of stakeholders before a full gaming workshop.	Agreement on representation of vegetation states & dynamics. 2 vegetation state transition diagrams produced with different perceptions & used to build an ABMprototype.
Field gaming and simulation workshop	Doi Tiew School, Doi Tiew village, Tha Wang Pha District, Nan Province, Thailand	24-26 September 2008	Attended by a combination of farm types and local foresters to improve researchers' understanding & to stimulate collective	Validation of vegetation state transition diagram group of stakeholders. Herders more concerned by lack of grazing land in near future, aware of need

			learning & adaptive management. Test of computer-assisted RPG & computer simulations.	to improve cattle raising techniques. Improved communication between them & foresters.
Dissemination of workshop results with non-players in Tha Wang Pha District, Nan Province, Thailand	- Doi Tiew's village meeting room (200 persons) - Doi Tiew village Healthcare centre; - Nam Khang Unit Office; - Sob Khun Royal Project Office	10-11 October 2008	Presentation of the results and lessons learnt from the 1st workshop to villagers and local institutions. Some presentations were made by herders-players.	Posters & 3 short documents in Thai delivered to Nam Khang office,healthcare centre & Sob Khun Royal Project.
Validation of state transition diagram on vegetation dynamics among stakeholders	Nam Khang Reforestation Unit Office, Tha Wang Pha District, Nan Province	23 December 2008	Validation of state transition diagram by sharing perceptions among foresters, herders & researchers.	Agreement on updated version transition diagram accepted by foresters, herders, and researcher & used to improve ABM prototype before 2nd field workshop in February 2009.
Testing of improved version of simulator with national park rangers and foresters	Doi Tiew School, Doi Tiew village, Tha Wang Pha District, Nan Province, Thailand	15 January 2009	Test of the new updated version of the simulator & training of new participants in the process.	Agreement of rangers to participate in the 2nd gaming field workshop at Doi Tiew site.
2nd gaming & simulation field workshop at Doi Tiew site	Tha Wang Pha District, Nan Province, Thailand	10 March 2009	Model improvement and negotiation of co-management plan between herders, foresters and rangers	Model improved and agreement on a joint experiment on grazing land between foresters and herders
3nd gaming & simulation field workshop at Doi Tiew site	Tha Wang Pha District, Nan Province, Thailand	24-25 August 2009	Test of a 3rd updated version of the more autonomous simulator & training of more herders on how to use it	Autonomous simulator tested and former players able to train new herders joining the process
Field Visits to Project Partners				
Short field trips to the 5 sites in Thailand from the project office based in Bangkok	Northeast and northern Thailand	Numerous trips to the 5 Thai sites from mid-2005 to late 2009	Implementation of series of field workshops at 5 different sites	Co-design and use of simulators with local stakeholders to improve water governance.
Field trip to eastern Bhutan	Bhutan	28 February – 5 March 2006	Field workshop on land degradation at Radi site	Gaming simulator developed with trainees the week before tested.
Field trip to north Thailand	Doi Tiew site, Nan province,	25-27 April 2007	Negotiate project	Agreement on work plan

	Northern Thailand		work plan with local stakeholders	for 2007 wet season
Field trip to eastern Bhutan	Bhutan	15-30 June 2007	Project monitoring & planning, site visits, meetings at CoRRB-MoAB in Thimphu	Selection of a the new Kengkhar site (water scarcity for domestic consumption).
Field trip to eastern Bhutan	Bhutan	20 April-3 May 2008	Project monitoring & planning, site visits, meetings at CoRRB-MoAB in Thimphu	Participate in 1st field workshop at Kengkhar site in Mongar district.
Field trip to Bac Lieu site, Mekong delta	Vietnam	November 2008	Development of agent-based simulator with PhD. Student & collaborators	Prototype of ABM available.
Field trip to Bhutan	Bhutan	March 2009	Development of ABM simulator for Kengkhar site	Bhutanese collaborator trained on using the ABM simulator for Kengkhar site.
Field trip to Bac Lieu site, Mekong delta	Vietnam	23 February – 1 March 2009	Test and validation of agent-based simulator with PhD. Student & collaborators in a field workshop	ABM simulator ready to simulate scenarios proposed by stakeholders.
Field trip to Bhutan	Bhutan	6-16 May 2010	Project monitoring & site visit in Lingmuteychu watershed, meetings at CoRRB-MoAB in Thimphu	Development of the 7 village agent-based simulator for sharing irrigation water among villages at the catchment level.
Other Key Communication Activities				
In-country Training on Companion Modelling for Natural Resource Management	Natural Resources Training Institute (NRTI), Royal University of Bhutan at Lobeysa, Bhutan	23-27 January 2006	Training of resource managers & extension workers on PN25 methodology.	Application of new knowledge at Radi site the week after.
In-country training on Multi-Agent Systems and the CORMAS simulation platform	Faculty of Science, Chulalongkorn University, Bangkok, Thailand	September 2006 (5 days)	Training of Thai scientists on PN25 participatory simulation & main tools.	Dissemination of PN25 methodology & tools.
Introduction to Companion Modelling for ecosystem management	Faculty of Science, Chulalongkorn University, Bangkok, Thailand	17-19 October 2007	Training of Thai scientists on PN25 participatory modelling method.	Dissemination of PN25 methodology to several Thai universities.
Training on advance use of Companion modelling, effects and impacts for NRM	College of Natural Resources (CNR), Royal University of Bhutan at Lobeysa, Bhutan	6-11 December 2007	Training of local resource managers & extension workers on PN25 methodology	Bhutanese collaborators trained on assessing effects and impacts of Commod activities.
Introduction to Companion Modelling for irrigation scheme management	Faculty of Natural Resources, Prince of Songkla University, Hat Yai, Thailand	26-31 January 2009	Training of a new team of Thai scientists on PN25 participatory simulation & main tools.	Application to irrigation water sharing in Pak Panang basin in Nakhon Sri Thammarat province.
Companion Modelling for Integrated Renewable	Faculty of Science, Chulalongkorn University,	11-22 May	Training of 20 young researchers	Dissemination of PN25 outputs. 5 PN25 PhD.

Resource Management	Bangkok, Thailand	2009	from 12 countries (inc. N. America & Africa) on PN25 methods & tools.	Students were trainers in this important closing event.
Action research for environmental management: Companion Modelling approach	Montpellier 3 University & Institute for Hot Areas, SUPAGRO, Montpellier, France	November 2009 (18 hrs)	Lectures and practical exercises on ComMod methodology & tools.	Dissemination of PN25 methodology & outputs.
Researcher training workshop on companion modelling	Balaruc-Les-Bains, southern France	23-27 November 2009	Training of 18 young scientists on methodology & tools.	Extensive use of PN25 case studies and outputs in this training.
Lectures on Companion Modelling for land management & environment	Paris Ouest Nanterre la Défense University, Paris, France	8-10 December 2009	Training of 18 French master students on ComMod methodology & tools.	Use of PN25 case studies
Training on "Introduction to Companion Modelling for integrated renewable resource management"	Faculty of Economics, Chulalongkorn University, Bangkok, Thailand	8, 11-13 January 2010 (12 hrs)	Training of 10 master students in Ecological Economics program	First teaching activity for PN25 PhD. Student Pongchai D.
Researcher training workshop on companion modelling	Chateauneuf-De-Gadagne, southern France	31 May-4 June 2010	Training of 20 young scientists on methodology & tools.	Extensive use of PN25 case studies and outputs in this training.
Researcher training workshop on companion modelling	Montpellier, southern France	Early 2011	Idem.	Idem.
Videos / DVDs / Plays / Songs / Oral Material Produced / Newspaper Articles / Radio Presentations / Television				
Clips, short movies & flash animations on PN25 website	PN25 website at www.cpwf25.sc.chula.ac.th	2008 to 2010	Description, results & outputs of field activities at key sites	Used in training activities

- **Status of expenditure and receipts to date (US$)** - please provide your final expenditure status in the format given below. Note: there are 3 tables a) Expenditures, b) Receipts and c) Matching Funds. In addition to this information an audited statement of expenditure will be required.

Please see the financial statements as of 31 December 2009 sent in late January 2010.

The audited statement prepared by KPMG was sent by Mrs. Claudette Andre, Accountant at CIRAD, to Mrs. Marene Abeyesekere on February 1, 2010.

a) Expenditures

Pr	Budget Item Code			COST IN US DOLLARS		
				TOTAL BUDGET	EXPENDITURES TO DATE	BALANCE AVAILABLE
	CONTRIBUTED FUNDS					
	1	**MATCHING FUNDS**				
	RESOURCES REQUESTED FROM THE CHALLENGE PROGRAM ON WATER AND FOOD					
	2	**PERSONNEL RENUMERATIONS, TRAVEL AND ACCOMODATION**				
	2.1		**PERSONNEL COSTS**			
	2.1.1		**Project Leader**			
	2.1.2		**Principal investigators (International)**			
	2.1.3		**Principal investigators (National)**			
	2.1.4		**Consultants**			
	2.1.5		**Support Staff**			
	2.2		**TRAVEL AND ACCOMODATION**			
	2.2.1		**Project Leader**			
	2.2.2		**Principal investigators (International)**			
	2.2.3		**Principal investigators (National)**			
	2.2.4		**Consultants & Support staff**			
	2.2.5		**Other project participants**			
	3	**RESEARCH OPERATIONAL COSTS**				
	3.1		**EQUIPMENTS**			
	3.1.1		**Office equipment**			
	3.1.2		**Laboratory equipment**			
	3.1.3		**Field equipment**			
	3.1.4		**Other equipment**			
	3.2		**COMMUNICATION COSTS AND CONSUMABLES**			
	3.2.1		**Communication expenses**			
	3.2.2		**Office supplies**			
	3.2.3		**Laboratory supplies**			
	3.2.4		**Field research supplies**			
	3.2.5		**Other services (please specify)**			
		TOTAL OF 2 & 3				
	4	**MISCELLANEOUS**				
	4.1		**CONTIGENCY (3%)**			
	4.2		**OVERHEADS**			
	4.3		**Others (please specify)**			
		TOTAL REQUESTED FROM THE CPWF				
	GRAND TOTAL					

b) Receipts

1	Total project budget (a)		$
2	1st tranche payment received	$	
	2nd tranche payment received	$	
	3rd tranche payment received	$	
	(insert more tranche payments as appropriate)	$	
3	Total funds received to date (b)		$
4	Balance of budget remaining (a – b)		$

c) Matching Funds

Name of Institute	Type of support	Amount (if applicable)	Is this as agreed, or are there deviations	Was there any risk to the project if a deviation

11. CPWF ASSESSMENTS *

Assessment *	Basin Coordinator				Theme Leader			
	1	2	3	X	1	2	3	X
Did the Project contribute quality outputs towards Basin and Theme priorities?								
Have you verified the progress and dissemination reported?								
Did the Project work according to its plan?								
Did the Project sufficiently focus on CPWF objectives?								
Did the Project demonstrate a new research approach in the spirit of CPWF?								
Were provisions for stakeholder and end user involvement adequate?								
Were provisions for addressing gender issues adequate?								
Were provisions for addressing environmental issues adequate?								

* Assessment: (1) Good: a high standard of work; (2) Adequate: an acceptable standard of work, but improvements are possible; (3) Inadequate: this aspect of the project is not up to standard and must be improved; (X) Not known.

RECOMMENDATION TO CPWF SECRETARIAT: SATISFACTORY / UNSATISFACTORY / TERMINATE

Feedback Comments from the Theme Leader to be provided to the Project Leader.
Feedback Comments from the Basin Coordinator to be provided to the Project Leader.

Note: the space available here for comments is not meant to be restrictive – use as much space as necessary.